



City and County of Kingston upon Hull

Annual Report

of the

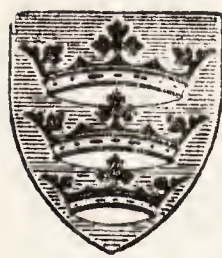
City Analyst

for the year

1965

R. T. HUNTER, B.Sc., F.R.I.C.

Public Analyst and Corporation Bacteriologist



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CITY LABORATORIES

1965

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PUBLIC ANALYST, CORPORATION CHEMIST AND BACTERIOLOGIST,
 OFFICIAL AGRICULTURAL ANALYST AND PORT ANALYST,
 PUBLIC ANALYST FOR THE COUNTY OF YORK, EAST RIDING,
 PUBLIC ANALYST FOR THE HALTEMPRICE URBAN DISTRICT COUNCIL
 R. T. HUNTER, B.Sc., F.R.I.C.

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 R. FAWCETT, F.R.I.C. (Resigned 24/1/65)
 A. H. LATIMER, B.Sc., F.R.I.C. (Commenced 1/10/65)

Assistant Chemists :

B. M. HILL, B.Sc.
 M. BENTLEY, A.R.I.C. (Resigned 30/11/65)
 D. DUNN, A.R.I.C.
 E. M. SMALES
 A. J. BARRON, L.R.I.C. (Resigned 11/4/65)
 M. A. GOUGH (Commenced 17/5/65)

Laboratory Assistant :

P. D. WARD

Clerk :

R. H. COOPER

Laboratory Attendants :

Miss O. WRIGHT
 Miss D. WRIGHT

THE CITY LABORATORIES,
184 HIGH STREET,
KINGSTON UPON HULL

To the Members of the City Council of Kingston upon Hull.

My Lord Mayor, Ladies and Gentlemen,

I have the honour to present my fourth Annual Report which deals with the work carried out in the City Laboratories during 1965.

The total number of samples examined was 10,513 as compared with 9,006 in 1964, of which 4,830 were submitted under the Food and Drugs Act as compared with 4,364. The percentage of unsatisfactory food and drug samples procured in the City (excluding poor quality milks) was 4.6 per cent.

This report has been presented in similar form for many years. It should not be assumed from this that the work done over the period has undergone no change or even little change. Many changes have occurred in the last decade. Pesticide and radioactive residues are possibilities in any food, penicillin and other antibiotic residues occur in milk, new 'wonder' drugs appear (and perhaps vanish) almost overnight. There is an increasing chemical sophistication of foods and an almost psychic subtlety in the misdescriptions and deceit of advertisements. Unfortunately none of this seems to be accompanied by a readily demonstratable diminution in the credulity of those who read, watch and listen.

All the members of the staff, have rendered able and willing service during the year and I have pleasure in acknowledging their zealous work. I would also like to thank the Members of the Cleansing and Sanitary Committee and the Health Committee for their continued interest and support.

Your obedient Servant,

R. T. HUNTER,

Public Analyst

CLASSIFICATION OF SAMPLES

During the year the number of samples of all kinds examined was 10,513 made up as shown below.

Kingston upon Hull—

Food and Drug Act :

Milk	2402	
Other Foods and Drugs	1406	
	—	3808

Bacteriological :

Designated Milks	285	
Ice Cream	94	
Swimming and Footbath Waters	115	
	—	494

Fertilisers and Feeding Stuffs 40

Atmospheric Pollution 2774

Miscellaneous (Other Corporation Depts.) 518

— 3332
— 7634

Hull and Goole Port Health Authority—

Food and Drugs Act 246

Ships' Drinking Waters 56

— 302

East Riding of Yorkshire County Council—

Food and Drugs Act : 678

Haltemprice Urban District Council—

Food and Drugs Act : 98

Miscellaneous—Other Sources—

1801

—
10,513
—

Official Regulations, Reports, Etc.

In the case of one food only, Dried Milk, were Statutory Regulations which effect the work of the Public Analyst published in the year under review.

The Dried Milk Regulations, 1965.

These Regulations differ only slightly from the 1964 Regulations (see Annual Report 1964 page 8 for a review). The differences are as follows

- (i) From 11-3-65 until 10-8-65 Dried Milk, as regards composition, description and labelling, may comply with either the old (1923-48) or the new (1965) Regulations. This is the main difference between the 1964/5 Regulations. It is suggested that it will ensure a smooth transition from the old requirements to the new.
- (ii) It will be recalled that the 1964 Regulations would have permitted 3 descriptions for dried milk previously described as SKIMMED viz. "partly skimmed," "low fat skimmed" or "skimmed." In the latter 2 cases a statement of the actual fat present would have been compulsory.
The 1965 Regulations retain the descriptions but in the case where "skimmed" is used a declaration of the fat present becomes voluntary. Both "low fat skimmed" and "skimmed" (when a declaration is given) must state the maximum amount that may be present, as distinct from the actual amounts present. The Dried Milk Regulations permit 6, perhaps 7, descriptions of dried skimmed milk. This might appear a fairly exhaustive number. However, during the year the industry produced another—NON-FAT SKIMMED.
- (iii) The importance of the remaining 3 amendments concerning caterers, government contracts and statement of equivalent pints would appear very slight.

Broadly speaking, in recent years the introduction of new or revised Food Standard Regulations has been a three stage process. The stages are marked by, first, a Food Standard Committee Report, next, proposals from the Ministry of Food and finally the regulations themselves.

During 1965 proposed Regulations were published for the following foods—Canned Meat, Meat Pies, Sausages, Coffee and mixtures, Butter, Margarine, Salad Cream, and Ice Cream. At present there are no specific regulations concerning the first three.

In addition official proposals to amend the following general Regulations were published—Colouring Matters in Food, Mineral Hydrocarbons in Food, Antioxidants in Food and Food Labelling.

Two reports were issued by the Food Standards Committee, an advisory Committee appointed by the Minister of Food, during the year under review. They discussed and made recommendations on the following topics—

1. Flavouring Agents used in Food.
2. Fish and Meat Pastes.

1. Flavouring Agents used in Food

A sub-committee of the Food Standards Committee began their review of this subject in February, 1961.

By the turn of the century the flavourings in common use were nearly all artificial and with the exception of vanilla, lemon, orange, peppermint and wintergreen were being made with synthetic materials. Very few new flavours have been introduced in recent years and most of those which are extensively used today have been in use for at least 20 to 30 years. A long list (containing over 1,200 flavourings) was submitted to the Standards Committee for consideration by the food industry and are presumably in use at the present time.

The Sub-Committee were not against the continued and widespread use of flavouring agents in food so long as toxicity data were satisfactory. They expressed concern that there was in effect no such data on most of them. They strongly urged manufacturers not to introduce new flavourings unless assured of their safety.

The main issue in the report was whether the use of flavouring agents in food should be controlled by a PERMITTED LIST or a PROHIBITED LIST. The Standards Committee recommended that a PERMITTED LIST should be the ultimate aim. For the present

they recommend a PROHIBITED LIST (containing 16 little used flavours) and that the position be reviewed in five years time. If in the interim toxicity tests revealed any further substances which were harmful they could be added to the list. The Sub-Committee considered that no useful purpose would be served by prescribing maximum limits for their addition.

They considered that containers should be labelled in a manner indicating whether or not the contents are natural flavouring, natural flavouring with fortification or synthetic flavouring.

2. Fish and Meat Pastes

The description Fish (or Meat) Paste is applied to articles containing Fish (or Meat) together with considerable amounts of cereal and water. The presence of a little seasoning is also usual. It will be noted therefore that though the description may be appropriate, having been established by long established usage and confirmed by a Food Standards Order, it is not true. In their report on Food Labelling 1964 (see Annual Report for 1964) The Food Standards Committee commented on a need to simplify the nomenclature for fish and meat "pastes" and like products. It seems to me a pity that the Food Standards Committee should have confirmed basically false descriptions rather than suggesting a new approach.

It is recommended

- (i) that articles described as "Potted, Chopped, Minced, Flaked (and also Dressed in the case of crab)" products shall contain not less than 95% of the meat or fish alleged to be present.

At least some of the meat articles to which the description POTTED has been given are mentioned in my Annual Report for 1962. It is to be hoped that the Regulations which should follow this report will limit it to the readily spreadable product. The description POTTED MEAT PASTE will be mentioned later. It will be noted in passing that the products covered by this recommendation are those that could truly be described as Fish (or Meat) Pastes.

- (ii) that the descriptions "Spread" or "in Jelly" should be reserved for those products in which the fish or meat alleged to be present should be present in an amount not less than 70%.

- (iii) that the description " Paste " should be reserved for those products in which the meat or fish present is not less than 70%.
- (iv) that no particular labelling provisions should be made for pâtes.

In the past the difference in description between an article containing 70% of salmon and another containing 25% of salmon and 45% of other fish (e.g. cod) has been so slight as to usually escape detection by the average purchaser. Recommendations (ii) and (iii) resolve the problem by reserving Spread for the former and Paste for the latter.

Butter is sometimes added to the above articles and the product sold as e.g. Potted Beef with Butter, Salmon Spread with Butter. The report supports this so long as not less than 6% of butter fat is present and the remainder complies with the appropriate standard. The manufacturers claim that the maximum amount of butter fat that could be added is self limiting at about 8%.

Recommendations are made concerning the analytical data to be regarded as fish or meat. The compositional standards are to apply to open and ready packed articles. ' White Fish ' is defined and will become a permitted generic description. It is recommended that a Code of Practice for the composition of Meat and Fish Pastes be produced as quickly as possible.

If the recommendations made in this report are adopted, a more logical and definitive set of regulations will be produced than those at present in existence. However, since they would not be based on true description it is doubtful if they would afford any greater protection to the average purchaser. Some doubtful questions are not discussed e.g. the article described as POTTED MEAT PASTE. One national firm have fairly recently started selling their meat paste in a special pot and claim that the word ' potted ' is only used to refer to this. No association in the mind of their product with POTTED MEAT is intended. The glass jars used for packing fish pastes are usually of characteristic shape. One national firm uses the characteristically shaped jar to sell their product. They describe it as FISH SAVOURY and it does not contain as much fish as the minimum required by the Food Standards order for Fish Paste.

In June 1960, the Local Authorities Joint Advisory Committee on Food Standards was formed. Usually by means of Sub-Committees it negotiates with food manufacturers. The aim is to produce an agreement on what is regarded as good practice in connection with the composition, labelling, advertisement, etc., of the commodity under discussion. These joint discussions should be a valuable supplement to the work carried out by the Food Standards Committee. During the year under review two new agreements, called Codes of Practice, were published. They were—

CP4 Canned Fruit and Vegetables (8/10/65)

CP5 Canned Beans in Tomato Sauce (8/10/65)

Composition of Foods

Milks

(a) 1,657 samples were received for chemical analysis, their average composition being as follows :—

Kingston upon Hull			
	No.	Fat %	Non-fat Solids %
1965	1408	3.78	8.81
1964	1265	3.73	8.69
1963	1211	3.78	8.68
1962	1477	3.75	8.73
1961	1303	3.72	8.72
1951-60		3.70	8.74

East Riding C.C.				Haltemprice U.D.C.		
	No.	Fat %	Non-fat Solids %	No.	Fat %	Non-fat Solids %
1965	228	3.90	8.80	21	3.68	9.03
1964	277	3.89	8.76	14	3.64	8.94
1963	242	3.82	8.79			
1962	214	3.89	8.80			

(b) MILK—CHANNEL ISLANDS

For milk sold as Channel Islands, Jersey, Guernsey or South Devon there is an absolute standard of 4% by weight minimum milk-fat content as distinct from the presumptive 3% standard which applies to other types of milk. Also the vendor can make an extra charge for it.

96 samples were received for chemical analysis, their average composition being as follows :—

Kingston upon Hull			
	No.	Fat %	Non-fat Solids %
1965	55	4.80	9.19
1964	55	4.68	9.10
1963	45	4.73	9.03
1962	64	4.75	9.06

East Riding C.C.				Haltemprice U.D.C.		
	No.	Fat %	Non-fat Solids %	No.	Fat %	Non-fat Solids %
1965	39	4.98	9.14	2	4.85	9.10
1964	68	4.69	8.98	4	4.46	9.34
1963	43	4.66	9.08			
1962	34	4.80	9.16			

3 samples were found to contain extraneous water (see later).

1 sample was found to contain less than 4% of fat. It contained 3.95% (KH 509).

If sold at 10½d. per pint, Channel Island milk of the average quality shown above (KH only) costs 1d. for 7.8 grammes of MILK SOLIDS.

(c) OTHER MILKS

1,561 samples were received for chemical analysis, their average composition being as follows :—

Kingston upon Hull						
	No.	Fat %	Non-fat Solids %			
1965	1353	3.74	8.79			
1964	1210	3.69	8.67			
1963	1166	3.75	8.67			
1962	1413	3.70	8.72			

East Riding C.C.						
	No.	Fat %	Non-fat Solids %		Fat %	Non-fat Solids %
1965	189	3.68	8.73	19	3.55	9.02
1964	209	3.63	8.68	10	3.32	8.78
1963	199	3.64	8.73			
1962	180	3.67	8.73			

Haltemprice U.D.C.						
	No.	Fat %	Non-fat Solids %			
1965	189	3.68	8.73	19	3.55	9.02
1964	209	3.63	8.68	10	3.32	8.78
1963	199	3.64	8.73			
1962	180	3.67	8.73			

If sold at 9d. per pint, milk of the average quality shown above (KH only) costs 1d. for 8.1 grammes of MILK SOLIDS.

In this country there is no definite standard of composition for liquid milk (other than that mentioned above under Milk—Channel Islands). In general, so long as it can be shown that it is as the cow produced it no offence is committed. A Government Committee in 1900 did not decide on definite standards but advised that milk containing less than 3% milk-fat and/or 8.5% non-fat milk solids should be suspect. This idea is retained in the most recent Sale of Milk Regulations (1939).

SUSPECT SAMPLES—KINGSTON UPON HULL

The details are as follows :—

	Total		Deficient in Fat		Deficient in N.F.S.		Deficient in Both	
	No.	%	No.	%	No.	%	No.	%
1965	240	17.7	73	5.4	177	13.1	10	0.7
1964	328	27.1	89	7.4	273	22.6	34	2.8
1963	300	25.7	59	5.1	263	22.6	22	1.9
1962	331	23.4	88	6.2	275	19.5	32	2.3

(i) Samples deficient in both MILK-FAT and NON-FAT MILK SOLIDS.

10 such samples were examined, 1 only (No. 627) contained extraneous water.

(ii) Samples deficient in MILK-FAT.

Of the 73 samples examined, 17 had a deficiency of less than 5%, 51 less than 15%, the largest deficiency recorded was about 28%.

(iii) Samples deficient in NON-FAT MILK SOLIDS.

A non-fat milk solids content of less than 8.5% raises the presumption that a milk contains extraneous water. The Hortvet Freezing-Point Test, developed in this country in the early 1930's is a very sensitive test indeed for the detection and determination of extraneous water and has since its inception been applied in this Department to milks containing less than 8.5% non-fat milk solids.

Of the 177 samples found to be deficient 118 had a deficiency of less than 2.5%, 163 less than 5%, the largest deficiency recorded was 10%. 11 samples were found to contain extraneous water.

SUSPECT SAMPLES—EAST RIDING C.C.

The details are as follows :—

	Total		Deficient in Fat		Deficient in N.F.S.		Deficient in Both	
	No.	%	No.	%	No.	%	No.	%
1965	23	12.2	12	6.3	17	9.0	6	3.2
1964	34	16.3	3	1.4	32	15.3	1	0.5
1963	19	9.5	8	4.0	13	6.5	2	1.0
1962	12	6.6	4	2.2	8	4.4	Nil	—

(i) Samples deficient in both MILK-FAT and NON-FAT MILK SOLIDS.

6 such samples were examined. 2 (Nos. 562 and 563) contained extraneous water.

(ii) Samples deficient in MILK-FAT.

Of the 12 samples examined, 6 had a deficiency of less than 5%. The remainder all had deficiencies in excess of 15%. In 2 samples this was due to the presence of large amounts of extraneous water. 4 'Appeal to Cows' samples (see Appendix II) *i.e.*, samples taken at "corresponding" milkings supervised by Corporation officials were taken in connection with a 16.6% deficient sample (No. 496B). It will be noted that only 1 contained more than 3% milk-fat. The worst sample contained only 2.1%.

(iii) Samples deficient in NON-FAT MILK SOLIDS.

Of the 17 samples deficient in NON-FAT MILK SOLIDS, 8 had a deficiency of less than 2.5%, 15 less than 5%. 4 samples were found to contain extraneous water.

(d) SAMPLES CONTAINING EXTRANEIOUS WATER

KINGSTON UPON HULL

16 such samples were examined during the year. 2 were of Channel Islands milk. All were received by way of normal routine sampling. The extraneous water present varied from 0.3 to 4.9%.

EAST RIDING C.C.

6 such samples were examined during the year. 1 was Channel Islands milk. The extraneous water present in 4 samples varied from 0.3 to 2.2%. Sample No. 562 contained at least 24% and No. 563 at least 48% of extraneous water. The vendor (the same for both samples) was prosecuted, convicted and fined a total of £20.

HALTEMPRICE U.D.C.

Of the 21 samples of milk submitted for examination 1, No. 9 which was 5% deficient in MILK-FAT, was reported as unsatisfactory.

It has been my experience that milk sampled as it comes from the farm may quite often have a Non-solids fat content of greater than 8.5% and yet contain extraneous water. This year 4 such samples, excluding the Channel Islands milks, were discovered.

At the moment efforts are being made to raise the quality of milk. A scheme to pay producers on a quality basis has recently become operative. A Government Committee in 1960 reported in favour of fixed minimum standards for milk-fat (3% within five years) and non-fat milk solids (8.5% within ten years) for milk sold by retail. There is a decrease this year in the number of poor quality (suspect) milks revealed by sampling ex-farm churns (the method by which Kingston upon Hull obtain most of their samples).

Meat and Fish Products

429 of the samples examined are classified under the above heading. Appendix III gives a list indicating the wide range of products tested.

The samples were submitted by, as follows :—

Kingston upon Hull	307	(52)
East Riding County Council	81	(16)
Haltemprice Urban District Council	8	(0)
Hull and Goole Port Health Authority	23	(7)
Private Purchasers	10	(0)

The figures in parenthesis represent the number of samples which were reported as unsatisfactory on the grounds of low meat (or fish) content.

At present there are no legal standards in this country for meat content in any meat product other than meat paste or spread. In the case of fish products, there are legal standards for fish content in fish pastes and in fish cakes.

2 samples of Fish Cakes (KH 1062 and 1257) were found to contain only 15 and 22 per cent of fish respectively instead of the required, not less than 35 per cent. The vendor was prosecuted, convicted and fined £3 with 2 guineas costs.

Several of the traditional articles on sale in butcher's shops have been found to be of unsatisfactory composition.

In assessing the meat content an average purchaser might expect in a particular article two sources of information are very useful. The first is a Food Standards Committee recommendation (where made) (has a national basis), the second is the average obtained by examining products made and sold locally in recent years (has a local basis). This data is incorporated in the following table which also gives the number of unsatisfactory samples examined during the year.

	Standard Required	Samples analysed (recently)		
		Number	Average Meat Content	Unsatisfactory samples (1965)
Aislet	(65)	27	68	4
Black Pudding	65	11	74	1
Brawn	80	20	79	0
Hamburgers etc.	80	64	79	3
Meat Pie	25	149	30	5
Meat and Vegetable Pie	12½	7	14	0
Polony	65	97	55	5
Potted Meat	95	68	88	3
Sausages, Beef	50	292	60	7
Pork	65	480	65	8
Luncheon	65	2	50	1
Sausage Rolls	(20)	56	23	1
Saveloy	(65)	49	61	1

Where the standard is in parenthesis the Food Standards Committee have made no recommendation.

SAUSAGES

Of the 16 samples of Pork Sausages taken in the City during the year 6 were found to contain less than 65 per cent of meat. In 4 cases the deficiencies were only slight. The other 2 samples (KH1297 and 1298) contained respectively 57 and 51 per cent of meat. The examination of 100 samples of beef sausages revealed 4 (KH255, 304, 320, 433) with a meat content of less than 50 per cent. On resampling the above 4, 2 samples (KH512 and 561) were found to be deficient. In both cases the vendor was prosecuted, convicted and fined £5. A further sample described as Luncheon Sausage (KH836) was found to contain only 55 per cent of meat instead of the expected 65 per cent.

In 1965 the East Riding County Council submitted 18 samples of Pork Sausages and 15 samples of Beef Sausages for examination. 2 of the former and 1 of the latter were found to be slightly deficient in meat content. In addition, 1 sample described as Beef and Pork Sausages (ER965) containing 54 per cent of meat and consequently reported as unsatisfactory, 1 sample of Tomato Sausages and 1 sample described simply as sausages were submitted.

HAMBURGERS ETC.

The sale of flat discs (or rectangles) of meat has increased markedly in recent years. Beefburger or hamburger appear to be the most common, but upwards of 15 descriptions are in use for them. In view of the similarity in appearance and name it seems reasonable to require the same minimum amount of meat in them all.

Of the 8 samples (excluding canned) examined during the year, 1 contained slightly less meat than the required 80 per cent. A further 2 (KH1069 and 1073) each contained 56 per cent.

POTTED MEAT

The Food Standards Committee in their Report on Food Labelling 1964 recommend that this article should contain not less than 95 per cent of meat and also that no cereal should be present. On this basis, of the 6 samples examined during the year 3—(KH670 and ER754B and 757B) containing respectively 52, 76 and 91 per cent of meat were deficient. None were adulterated with cereal.

Prepacked meat products, usually canned or frozen, have been the cause of considerable concern in recent years mainly due to the frequency with which their descriptions do not indicate the true nature of the contents of their tin or carton. Often considerable quantities of water and/or cereal are incorporated with no or inadequate declaration. The Food Standards Committee in their Report on Canned Meat Products, 1962, recommended the qualifying of the named meat with certain appropriate words as being an adequate declaration. The list of appropriate words includes the following with the amounts of added water and/or cereal they could mean in practice in parenthesis : “ with jelly ” (18%) ; “ with gravy ” (20%) ; “ with sauce ” (30%) ; “ luncheon ” (20%) ; “ Loaf ” (35%). The following

is a list of the canned meat products reported as unsatisfactory, their respective meat contents are also given. The amount given in parenthesis is the Food Standards Committee's recommendation for the article.

HG360	Bacon Grill	87%	(95%)
HG851	Bacon Grill	87%	(95%)
KH753	Beef and Egg Noodles with vegetables	12%	(35%)
KH754	Beef and Egg Noodles with vegetables	11%	(35%)
ER533	Chicken Casserole	47%	(95%)
ER521	Ham and Chicken	91%	(95%)
ER519	Ham with natural juice (chopped)	92%	(95%)
KH8	Ham and Pork, chopped	83%	(95%)
ER511	Ham and Pork chopped	91%	(95%)
ER512	Ham and Pork, chopped	91%	(95%)
ER551	Ham and Pork, chopped	92%	(95%)
HG19	Ham and Pork, chopped	85%	(95%)
KH1	Kidneys, braised pork	71%	(95%)
HG788	Kidneys, braised in gravy	71%	(75%)
HG59	Meat Loaf, minced	60%	(65%)
HG211	Meat Loaf, minced	59%	(65%)
ER535	Pork	89%	(95%)
KH2	Pork and Ham, chopped	88%	(95%)
KH80	Pork and Ham, chopped	91%	(95%)
KH88	Pork and Ham, chopped	89%	(95%)
ER513	Pork and Ham, chopped	87%	(95%)
KH85	Pork in natural juice	85%	(95%)
ER517	Pork in natural juice, chopped	89%	(95%)
KH845	Pork, stuffed	60%	(80%)
KH5	Pork, chunky	90%	(95%)
KH81	Pork, chopped cured	90%	(95%)
KH151	Pork, chopped	80%	(95%)
KH835	Pork, chopped	91%	(95%)
KH837	Pork, chopped	91%	(95%)
KH843	Pork, chopped	68%	(95%)
KH7	Steak, savoury minced	66%	(90%)
KH758	Tongue dinner	23%	(35%)

1 sample of Corned Beef (Private) was considered inedible. Numerous black patches were present on the meat due to a phenomenon known as 'sulphide blackening.'

Other Foods

During the year 1 of the samples submitted—Private, Castor Sugar—was considered to be inedible on account of its unsatisfactory taste and smell. The slight “off taste” complained of was not generally noticeable. However, in addition the article was damp. Storage for too long a time and/or under unsatisfactory conditions is the usual cause of this type of complaint.

2 samples of Canned Tomatoes HG 65/193 and 65/194 were submitted in a “blown” condition. The interiors of the cans indicated that this could readily be attributed to bad canning practice having been used.

Canned Fruit in Syrup (Private)—slight darkening of the contents of the can (particularly the syrup) was noted. It had resulted from the packing of fruit of relatively high acidity in an apparently unlacquered metal container. It was considered that the darkening would rapidly increase on storage.

24 samples of BREAD and 2 BREAD ROLLS were examined. The plain white (5) and brown (8) breads were found to be of satisfactory composition. However, 2 Milk Breads, 5 Milk Cobs and 1 Milk Roll were found to be unsatisfactory. The Bread and Flour Regulations, 1963 require that types of bread described as ‘Milk’ *e.g.*, Milk Loaf shall contain not less than 6 per cent of whole milk solids (calculated by weight on dry matter). The following percentages of whole milk solids were found—Milk Loaves KH457 1.6, KH458 5.4 ; Milk Cobs KH459 4.2, KH461 3.9, KH462 2.4, KH463 3.0, ER774B 3.4 ; Milk Roll KH464 4.7.

The amount of fruit present in 16 FRUIT PIES was determined. 20 per cent of the named fruit seems a reasonable standard. 2—KH724 Blackcurrant and KH730 Gooseberry containing 13 and 17 per cent respectively were reported as unsatisfactory.

In the case of CANNED FRUITS and VEGETABLES your Analyst is prepared, for the time being, to accept as standards what the canners themselves describe as good commercial practice. 27 samples of canned fruit were examined during the year. 1—KH1038 Strawberries in Syrup—contained only 40 per cent of strawberries instead

of an expected 50 per cent. In the same period 45 canned vegetables were examined. 10 were reported as unsatisfactory. Further details are as follows :—

		% Total Solids present	% standard
KH563	Baked Beans in tomato sauce	25	28
KH569	Beans and frankfurters	24	28
KH567	Beans in rich tomato sauce	26	28
KH570	Beans in tomato sauce	25	28

		% Vegetable present	
KH489	Broad beans	56	63
KH491	Broad beans	59	63
KH492	Mixed Vegetables	55	63
KH493	Mixed Vegetables	61	63
KH498	Mixed Vegetables	61	63
KH499	Mixed Vegetables	60	63

It will be noted that the standard used for the above permits up to approximately one third of the contents of the can to consist of added water.

The Food Standards (Preserves) Order, 1953, requires that MINCEMEAT must contain a minimum amount of sugar. This amount is regarded as the minimum necessary to avoid rapid deterioration of the product under normal conditions of storage and use. Of the 17 samples examined 2—KH1190 and ER942 containing respectively 64 per cent and 61.8 per cent—were deficient in sugar as indicated by the determination of 'Soluble Solids.'

The Food Standards (ICE CREAM) Regulations, 1959, include the following requirements—(i) that an article described as Ice Cream shall contain at least 5 per cent of fat and 7.5 per cent of non-fat milk solids ; (ii) the same standards shall apply to an article described as DAIRY Ice Cream except that the fat must be all butter fat, and (iii) the use of artificial sweetening materials such as saccharin are prohibited. The Food Labelling Order requires prepacked ice cream to bear a statement to the effect that it contains fat not derived from milk and also suggestions of connections with a dairy, by word or pictorial device, are forbidden.

Details of the 105 samples examined are as follows :—

KINGSTON UPON HULL							
	No.	Av.	Fat %		Non-Fat Milk		Solids %
			Max.	Min.	Av.	Max.	Min.
Dairy Ice Cream	12	10.2	14.6	6.9	11.5	13.2	10.1
Ice Cream	79	8.6	13.8	5.7	12.1	17.9	8.9
	91	8.8	14.6	5.7	12.0	13.2	10.1
EAST RIDING COUNTY COUNCIL							
Dairy Ice Cream	1	11.2	—	—	9.6	—	—
Ice Cream	13	9.2	12.9	7.2	10.8	16.5	9.0
	14	9.36	12.9	7.2	10.68	16.5	9.0

No sample was found to contain artificial sweetening material. It will be noted that all samples were of satisfactory chemical composition.

APPLE JUICE—ER497B—was found to contain only 4.2 milligrammes of Vitamin C per fluid ounce whereas not less than 9.8 milligrammes were claimed on the label.

FOOD FLAVOURING—KH1153—0.85 fluid ounces were present instead of 1 fluid ounce as stated on the label.

Food Labelling

Introduction—Section 6 of the Food and Drugs Act, 1955, makes it an offence to give a label with or publish an advertisement for, a food which falsely describes it or is likely to mislead a purchaser as to what he would be buying.

Section 7 of the Act gives very wide powers for the making of Regulations for controlling the labelling and advertising of foods. These are exercised to quite a marked degree in the Food Labelling Order. Part I of a two part survey of the Order by the Food Standards Committee was issued in 1964 (see Annual Report 1964 page 9 for a short review).

Part IV of the Food Labelling Order deals with the labelling of certain foods (ICE CREAM, PEAS, COFFEE, BUTTER, MARGARINE, STRONG NON-BREWED CONDIMENT). In recent years new or revised Food Standard Regulations have usually incorporated labelling provisions relating to the commodities being controlled.

In the year, 18 articles were considered unsatisfactorily labelled ; 13 submitted by Kingston upon Hull, 4 by the East Riding County Council and 1 by the Hull and Goole Port Health Authority.

Descriptions—Most foods when packed ready for sale must carry a label giving the usual or common name of the article. This usual or common name may be identical in word and/or meaning with a true description. Quite often of course it is not. The number of articles which are given names which are in effect identity tags rather than true descriptions is increasing.

Some descriptions though satisfying the law in their content seem to offend in their presentation. Differences in the size of the various words and clever use of differently coloured letters and backgrounds can, on occasions, deceive even a highly trained observer.

Details of the articles considered unsatisfactorily described are as follows :—

KH25 and KH27 Cream Cakes—which were found to contain no cream.

ER832 Butter Madeira Cake—Almost half the fat present was NOT butter.

ER852 Butter Eccles Cake—Contained no butter.

KH690 and KH919 Cottage cheese—These articles were a type of cheese. It is not considered that the word Cottage indicates the type clearly enough. Proposed regulations require the addition of the words “ Medium Fat Curd ” with or without the deletion of the word Cottage.

ER561 Compound Pie Flour Mix—4 separate packets were present consisting of a Flour mix, cheese, sauce mix and yeast. The cheese had been prepared from skimmed milk. It was considered that the description ‘ Italian style hard grating ’ was insufficient indication of this.

ER445B Meat Paste—This article was sold prepacked. It was not labelled.

HG 65/177 Creme de Foie au Porto—This article proved to be a meat paste of satisfactory meat content. However, it was reported as unsatisfactorily labelled on the grounds that an average purchaser would be unlikely to discover this from the above description.

KH1043 Apricots, canned in syrup—This article packed in a can was described simply as Apricots. No mention was made of the sugar syrup in which the fruit were immersed.

Declaration of Ingredients—To comply with the Food Labelling Order, many foods consisting of more than one ingredient, when packed ready for sale, must include on their label a statement as to which ingredients (with the exception of added water) are present and what are their relative amounts. Quite often manufacturers of articles not required by law to disclose ingredients choose to do so. In general, if this is done in the form normally adopted then, in assessing whether or not the disclosure is satisfactory, the same principles are applied as would be applied if the disclosure were compulsory. The Food Labelling Order review supports this procedure.

Details of the articles with unsatisfactory disclosed ingredients are as follows :—

KH1254 and KH1255 Christmas Puddings—No disclosure of ingredients was given.

KH230, 232, 235 Prepared Mustards—In each case although the amount of vinegar present was much in excess of the amount of mustard, mustard preceded vinegar in the list of ingredients given.

KH713 Custard Powder—The addition of a small amount of salt was not disclosed.

KH13 Honey'd Lemon Spread—No disclosure of ingredients is required on this article. However, a list was given which implied that all the fat present was milk fat. In fact, approximately 80 per cent of the fat consisted of margarine. The manufacturer of the article was prosecuted, convicted and fined £10 plus 25 guineas costs.

KH719 Custard Powder—The name and address of the packer was omitted from the label.

Food Additives

Several regulations of a general character are concerned with the addition of chemicals of no intrinsic nutritional value, to foods.

These include the following :—

Artificial Sweeteners Order	1953
Colouring Matter Regulations	1957
Antioxidant Regulations	1958
Preservative Regulations	1962
Emulsifiers and Stabilisers Regulations	1962
Mineral Hydrocarbons Regulations	1964

Also several regulations prohibit or permit the addition of chemicals to the particular food to which they refer. For example, the Bread and Flour Regulations, 1963, permit the addition of certain of the so-called Bleaching and Improving Agents to Flour. The Meat (Treatment) Regulations, 1964, prohibit the addition of certain chemicals to raw and unprocessed meat.

A considerable amount of time is spent at the City Laboratories seeking contraventions of the above Regulations.

Details of certain of the examinations are as follows :—

Regulations	Number examined	Number containing	Contraventions
Preservative	847	236	63
Colouring Matter	540	317	1
Antioxidant	119	23	0

The numbers do not include milk samples all of which were examined for the presence of preservatives and colouring matters with negative result.

Preservatives

61 of the samples which contravened the Preservative Regulations consisted of CAULIFLOWERS packed IN BRINE. 59 were submitted by the Hull and Goole Port Health Authority. They contained sulphur dioxide. This is permitted in this article in wholesale trading but only if accompanied by a document giving the description and maximum quantity of the preservative present. Gherkins, onions and mixed vegetables packed in brine as well as retail packs of mixed pickles were all found to be entirely free from preservative. The packers said that sulphur dioxide was not being added as such but was derived from the casks which had become contaminated by their previous contents.

HG 65/42 Concentrated Lemon Juice—was found to contain 600 parts per million of sulphur dioxide. The maximum permitted is 350.

KH917 Danish Blue Cheese—was found to contain 20 parts per million of nitrites. The maximum permitted is 10.

Tetracyclines are antibiotics frequently used in medicine. In recent years trials have been carried out to ascertain their value as food preservatives. The Preservative Regulations, 1962, permit up to 5 parts per million to be present in raw fish.

It appears that fish landed at Hull may contain Chlortetracycline and fish landed at Grimsby Oxytetracycline. During the year 7 samples (all from Grimsby) were submitted for examination. No tetracyclines were detected.

Colouring Matters

KH1344 Cake Decoration—was found to contain a non-permitted colouring matter.

Antioxidants

It will be noted that no sample was found to contravene the Regulations. A marked increase was noted in the percentage of samples containing permitted amounts.

The Ministry of Food is thought to be currently reviewing the following classes of food additive : solvents, pH regulators, sequestrants, humectants, propellants, glazes, antifoaming agents, anticaking agents, release agents and firming agents.

Foods Containing Extraneous Matter

From time to time all manner of peculiar objects are found, on visual examination, in foods.

Details of such samples (13) received during the year are as follows :—

Biscuits and (HU—) Sausage Roll—contained dirt.

Cream Cake—contained vegetable fibre and dirt.

Corned Beef—contained jute fibre.

Pork Pie—a mould growth was present.

KH799 Dried Prunes—maggots were present.

HU 13/65 Date and Walnut Loaf—contained a beetle.

Jam—contained a snail.

ER577 Fruit Pie Filling—contained a small winged insect.

Meat and Potato Pie—contained a large fragment of glass.

HG 65/95 and 65/212 Onions—one sample had received surface contamination with molasses or a similar compound. The skins of the other were black due to an unidentified cause.

Blancmange—dark coloured patches were noted. These had arisen due to the presence of iron probably derived from the vessel in which the article was prepared.

Most of the above samples were received from, or as a result of complaints by, private purchasers.

In their production many foods are liable to contamination of another, more dangerous, type. They may pick up traces of chemicals some of which are highly toxic, and which are not visible to the eye. Regulations of a general character concerned with this type of extraneous matter are the :—

Arsenic in Food Regulations, 1959

Lead in Food Regulations, 1961

In addition the Food Standards Committee has considered and recommended limits for the amounts of Copper and Zinc that may be present in Foods. The Fluorine in Food Regulations, 1959, are concerned with the contamination of acidic phosphates, and hence the foods which often contain them such as Baking Powder and Self Raising Flour, by Fluorine.

A considerable amount of time is spent at the City Laboratories seeking contraventions of the above regulations (or recommendations).

Details are as follows :—

Regulation or recommendation	Number examined	Number containing	Contraventions
Arsenic . . .	236	59	0
Lead . . .	459	243	1
Copper . . .	57	57	3
Other Metals etc. .	35	22	0

A sample of Angelica (KH1236) was found to contain 4 parts per million of lead. The Regulations require that it should not contain more than 2 parts.

KH1227, 1228, 1229 Candied Peels contained respectively, 70, 30 and 25 parts per million of copper.

20 parts per million is the generally accepted unofficial limit. The most likely source of the copper is one of the sprays used on the fruit, from which the peel is derived. The use of defective tinned copper tubing in the processing plant has also been suggested.

In mid 1963 the Milk Hygiene Sub-Committee (a sub-committee of a Committee set up by the Minister of Food to advise on technical problems in the dairy industry) published their report on "Antibiotics in Milk in Great Britain." In England and Wales during 1961 41,700 samples of ex-farm milks were examined. 11 per cent were shown to contain antibiotics. The survey also revealed that penicillin was the most common antibiotic present and that seasonal and regional variation existed.

In September 1963 the testing of samples was begun at the City Laboratories.

Details are as follows :—

	Number examined	Antibiotics present in	per cent	Penicillin more than 0.05 I.U. per ml.	less than 0.05.I.U. per ml.	Other Antibiotics
1963	165	26	15.7	—	—	—
1964	686	104	15.2	16	87	1
1965	1198	59	4.9	10	49	—

It seems probable that successful prosecutions recorded in other parts of the country have played some part in the marked reduction in the percentage of samples found to contain penicillin.

Since 1945, but more particularly in the last 10 years a large number of "wonder" chemicals have been introduced into agriculture and horticulture for the control of pests. Most are highly toxic to humans and there is the danger that significant amounts may find their way into foodstuffs. This danger can be considerably reduced by care in the use of the chemicals. In this country control is mainly exercised by a voluntary scheme designed to promote this. While agreeing that this may be satisfactory as far as it goes many people would like to be reassured that it is producing the desired result. There is a growing demand for a much more extensive testing of foods than has hitherto been attempted. During the year the following 19 articles were examined for the presence of Organic Insecticides with negative result. Apples (3), Apricot pulp (1), Oranges (3), Pears, Tomatoes (4), Brussel Sprouts (4), Lettuce (2), Carrots. In each case the *Drosophila* Fly Test was augmented by a Gas Liquid Chromatograph examination designed primarily for the detection and determination of organo-chlorine insecticides.

AFLATOXIN. In Britain in 1960 outbreaks of an apparently new disease occurred in young turkeys causing over 100,000 deaths in a few months. The common factor in all the outbreaks was found to be ground-nut meal. Investigation showed that a strain of the common mould *Aspergillus flavus* was the responsible agent. It produces a toxic factor (named AFLATOXIN) when grown on sterile non toxic groundnuts. Comparative feeding trials have shown variations in susceptibility to the effect of AFLATOXIN in different species of animals. Ducklings are particularly sensitive, chickens comparatively resistant. Lambs are much less susceptible than calves or pigs. It must be emphasised that there is no scientific evidence that humans have suffered ill effects from the consumption of groundnuts contaminated with AFLATOXIN. However the problem is being extensively studied nationally.

2 samples of groundnuts in shell were taken by the Port Health Authority. 1 sample, 65/166, was found to contain what is termed a 'very high' amount of aflatoxin.

Drugs

147 samples were submitted for examination during the year, 139 by Kingston upon Hull, and 8 by the East Riding County Council. 2 were found to have compositional defects and 5 were unsatisfactorily labelled.

Details are as follows :—

KH776 Weak solution of Iodine—contained 2.9 per cent w/v of Iodine and also potassium iodide, instead of between 2.4 and 2.7 per cent, as required by the British Pharmacopeia 1963.

KH924 Sulphur Tablets—contained 19 per cent of Sulphur in each tablet. The label claimed 46 per cent.

KH387 and KH389 Parrish's Chemical Food—were both labelled "B.P." There is no monograph on this article in the current edition of the British Pharmacopeia.

KH576, KH577, KH578 Golden Eye Ointment—In each case they were labelled "Hydrarg. Oxid. Flav. B.P." There is no monograph on this article in the current edition of the British Pharmacopeia.

In December 1964 a Circular was issued by the Ministry of Health pointing out that Sampling Officers had the power to sample drugs not on sale to the general public and usually received by them by way of doctors' prescriptions. This power has existed for a long time but it was represented to the Minister that some pharmacists were reluctant to supply these drugs. No such drugs have been received for examination at the City Laboratory for many years. Another body (not the Local Authority) checks prescriptions.

In recent years several leading members of the Pharmaceutical Profession have severely criticised the method of Drug Testing used by most Local Authorities. They have suggested that it be abandoned and taken over by their Profession. New legislation to strengthen the power of the Local Authorities would seem to me a much better solution.

Bacteriological Examinations

A total of 494 samples were submitted by the Medical Officer of Health (Kingston upon Hull) for bacteriological examination. They consisted of the following : Designated Milks, 285 ; Ice Creams, 94 ; Swimming Bath Waters, 66 ; and Footbath Waters, 49. 46 received adverse comment.

In addition, the Hull and Goole Port Health Authority submitted 59 samples of liquid egg for examination. 1 was reported as unsatisfactory.

Designated Milks—According to the Milk (Special Designation) Regulations, 1963, milk sold as Untreated or Pasteurised must comply with a test which is some indication of keeping-quality (Methylene Blue Test), also Pasteurised (Phosphatase Test) and Sterilised (Turbidity Test) milks must comply with tests that indicate they have been efficiently heat treated.

During the year the following number of milk samples were examined to check the designation used—Untreated 125, Pasteurised 123, Sterilised 37. Untreated Milk No. 66, and Pasteurised Milk No. 94 failed Methylene Blue Tests while Sterilised Milk No. 24 failed the Turbidity Test. All other samples passed the appropriate test (or tests).

Ice Cream—Using the Methylene Blue Test 94 samples were examined and graded as follows : Grade I, 68 ; Grade II, 6 ; Grade III, 10 ; Grade IV, 10. The samples in Grades III and IV, 20 (21.3%) were considered to be unsatisfactory. In previous years 26% (1961), 23% (1962), 9.6% (1963), 7.7% (1964) were similarly considered so. It will be noted that the improvement recorded in 1963 and 1964 has not been maintained. There was evidence in each case that low grading was associated with the presence of thermoduric organisms.

Swimming Bath Waters—66 samples from 14 swimming baths were examined for the presence of presumptive coliform organisms. In 2 samples they were shown to be present.

Footbath Waters—49 samples from 10 footbaths, adjacent to the swimming baths, were also examined for the presence of coliform organisms. In 21 samples they were shown to be present.

Fertilisers and Feeding-Stuffs

33 animal feeding-stuffs and 5 fertilisers were submitted by Kingston upon Hull during the year, of which 13 (8 animal feeding-stuffs and all the fertilisers) were unsatisfactory, in as much as their statutory statement of composition did not agree, within the official limits of variation, with the analytical findings.

Details are as follows :—

ANIMAL FEEDING-STUFFS

No. 5	White Fish Meal	Phosphoric Acid	6.6%	(8.5%)
No. 6	Broiler Finisher Pellets	Oil	6.5%	(4.0%)
No. 8	Sheep Nuts	Magnesium Oxide	0.5 ozs. per lb.	(2 ozs per lb.)
No. 9	Pig Finisher	Copper	120 parts per million	(175 parts per million
No. 15	Broiler Pellets	Oil	4.5%	(3.25%)
No. 17	Cow Cobs	Magnesium oxide	1.7 ozs. per 3 lbs.	(2 ozs. per per 3 lbs.)
No. 36	Bacon finisher Concentrate	Protein	35.2%	(40.0%)
No. 38	Magnuts	Protein	11.8%	(8.0%)

FERTILISERS

No. 10	Compound Fish Manure	Potash	4.8%	(6.0%)
		Phosphoric Acid (insoluble in water)	2.6%	(1.5%)
No. 31	Compound Fish Manure	Nitrogen	5.9%	(5.0%)
		Phosphoric Acid (insoluble in water)	3.9%	(3.25%)
No. 32	Compound Fish Manure	Phosphoric Acid (soluble in water)	3.5%	(4.5%)
		Phosphoric Acid (insoluble in water)	2.9%	(1.5%)
No. 33	Compound Fish Manure	Phosphoric Acid (soluble in water)	3.3%	(2.2%)
No. 34	Compound Fish Manure	Nitrogen	8.2%	(7%)
		Phosphoric Acid (insoluble in water)	3.0%	(1%)
		Potash	5.7%	(7%)

The figures given are those obtained on analysis. The figures in parenthesis are the amounts of the respective ingredients that were claimed to be present.

2 animal feeding-stuffs were submitted privately for examination and found to be satisfactory.

Atmospheric Pollution

The department maintained its interest in atmospheric pollution throughout the year. We collaborated as fully as before in daily measurements of smoke and sulphur dioxide made at 5 specially selected sites within the City. In addition, we gave a small amount of assistance to the Ministry of Technology in its investigation on the drift of pollution from cities and also measured smoke readings taken at Market Weighton.

The average daily amounts of smoke and sulphur dioxide, calculated on a 3 monthly basis and expressed as microgrammes per cubic metre, found in the atmosphere outside the City Laboratories since 1958, are as follows :—

	Jan-March		April-June		July-Sept.		Oct-Dec.	
	Smoke	SO ₂	Smoke	SO ₂	Smoke	SO ₂	Smoke	SO ₂
1958	370	180	230	120	180	90	500	250
1959	360	230	120	110	100	100	240	170
1960	270	190	100	110	90	100	270	190
1961	230	200	80	100	90	80	270	200
1962	250	190	90	110	60	60	240	220
1963	210	210	80	90	80	70	160	140
1964	170	170	70	90	60	100	200	210
1965	150	200	60	90	60	70	150	150

The corresponding figures on an annual basis are :—

	1954-8	1959-62	1963	1964	1965
Smoke	320	180	130	120	100
Sulphur dioxide	140	150	130	120	130

The City now has 9 areas under smoke control (it being understood that certain of these adjoin one another) 3 have been controlled since 1/6/59, 5 since 1/10/61 and 1 since 1/10/62. This would account for the dramatic and continued fall in the SMOKE figures since 1958. It will be noted that the SULPHUR DIOXIDE figures show little change.

The daily averages, calculated on an annual basis, recorded at the above mentioned 5 stations are as follows :—

Type of Area		Smoke		
		1963	1964	1965
Residential (Smoke Controlled)	Greenwich Avenue	40	50	40
Industrial	Clough Road	100	120	80
Residential (low population density)	Ellerburn Avenue	130	140	120
Commercial	High Street	130	120	100
Residential (high population density)	Gordon Street	200	200	210
		Sulphur Dioxide (SO ₂)		
	Greenwich Avenue	80	90	70
	Clough Road	160	180	160
	Ellerburn Avenue	110	110	100
	High Street	130	120	130
	Gordon Street	150	150	160

Miscellaneous samples for other Corporation Departments

518 samples were submitted compared with 538 in 1964.

Water Engineer—304 samples of water drawn at these laboratories were examined for residual chlorine only. The average amount found was 0.15 parts per million. The figures varied between 0.08 and 0.22 parts per million.

Medical Officer—160 samples were submitted consisting of Swimming Bath Waters (66), Footbath Waters (49), Paddling Pond Waters (12) for residual chlorine determination : Waters (22) to assess the efficiency of a newly installed chlorination plant : Under-floor Waters (9) to assist in the discovery of their source : Fish Slime (1) and Borehole Water (1).

City Engineer—submitted 24 samples consisting of Waters (16), Soils (1), Farm Effluents (2), Salt Deposit (2), Glazed Earthenware, Face Gravel and Sulphite Lye.

City Architect—submitted 6 soils for pH determination.

Supplies Officer—submitted 5 samples, 4 of soap and 1 of Detergent Powder, for examination.

City Coroner—submitted 12 specimens consisting of Blood (for alcohol content determination) 4 ; (for barbiturate content determination) 2 ; (for carbon monoxide determination) 1 ; Urine (for alcohol content determination) 1 ; (for barbiturate content determination) 1 ; Stomach and contents (for barbiturate content determination) 2 and Stomach and contents.

Chief Inspector of Weights and Measures—submitted a sample of sand for examination.

Parks Superintendent—submitted 5 samples consisting of Soils (2), Tree Stakes, Wood preserving solution and water.

Telephone Manager—submitted a sample of water suspected of being contaminated with sewage.

Miscellaneous—Other Sources

1,857 samples were submitted compared with 769 in 1964. The increase is the result of an increase in Atmospheric Pollution estimations.

The ' other sources ' mentioned in the title consist of neighbouring authorities, private firms and individuals.

Atmospheric Pollution—1,406 estimations were made.

Milks—235 samples were submitted privately to check designation.

Other Foods and Drugs—48 samples were submitted.

7 samples of Fish (cod, haddock or " coley ") were examined for the presence of tetracyclines with negative result. 4 samples of Brazil Nuts were examined for the presence of aflatoxin with negative result. The meat content in Polonies (5), Sausages (3), Meat Pies (3) and Sausage Roll filling (1) were checked. In connection with the polonies the rusk filling used was also examined. Polonies (3) and Meat Pies (1) were substandard. The vitamin C content was required in Fruit Juices (2) ; the fat content in Double Cream ; the moisture and free fatty acids in Lards (2) ; and the lead content in Cocoa bean butters (7). All 7 samples contained lead of which 3 contained less than 0.5 parts per million, 2—0.5 parts, 1—0.6 parts and 1—1.4 parts. 2 samples of biscuits were examined. 1 to determine the amount of carbohydrate per biscuit, the other to determine the calories and protein per packet. A sample of sago with a " musty " taste and smell

was found free from 'foreign material.' A complaint of abnormal taste and smell in a cooked turkey was not confirmed. A sediment in liquid glucose consisted of iron with adhering rust. 'Home made' chutney was found to contain large amounts of lead and copper presumably derived from the vessel in which it was prepared. The housewife who made it was strongly advised to destroy it.

Vetinary Epsom Salts, cachets of Paramisan Sodium, Aspirin tablets and codeine tablets, 1 sample each, were examined to determine if they complied with present standards.

A few drops of liquid in a syringe proved to be distilled water.

A large number of tablets in a tin, discovered under suspicious circumstances proved to be tablets of amphetamine sulphate. They were in fact the well known 'pep pills.'

Waters—156 samples were submitted. Though numerically not very large in the work of the Department water examinations are required to answer a variety of queries. Perhaps the most common is—Is the water fit to drink and likely to remain so? The analysis carried out depends upon the source of the water. During the year, in this connection the following samples were analysed—Ships' waters 56(HG), tap and borehole waters (28).

Fluoride addition to drinking water is a topical problem and unfortunately appears likely to remain so for several years. 4 samples were submitted for fluoride estimation only. The amounts found varied between 0.04 and 0.12 parts per million. The recommended amount is 1 part.

3 sources of supply (taps) were alleged to produce tea of a peculiar colour and taste. 2 (3 samples) contained excessive amounts of iron and the complaints seem justified. In the remaining case it was concluded that the water was unlikely to be a causative agent.

Since swimming bath water may inadvertently become drinking water, particularly where school children are concerned it is desirable that the water in public swimming baths should reach the standard of drinking water. With adequate circulation and filtration this should be obtained if a residual of FREE Chlorine between 0.2 to 0.5 parts

per million is maintained. Residual FREE chlorine was checked in 55 samples. Non chlorinated expanses of water may be regarded as suitable for bathing under certain conditions among the most important of which are the absence of sources of pollution, a large volume of water compared with the number of bathers and infrequent use. Analysis was used to support the view that a lake and a reservoir were suitable for bathing.

Water of abnormal pH and/or containing sulphates above a low minimum amount damage ordinary concrete. pH and sulphates are therefore often determined in sub soil waters and sewage and trade effluents to assess their likely effect. 2 sewage samples were examined during the year.

It would appear that water of unknown origin frequently appears in the cellars of buildings. Analysis is often of use in tracking down the source—the most likely being rain water, a leak in a water main or a cracked sewer. 1 sample was examined during the year.

The examination of 4 samples proved insufficient to solve the problem of why most of the salmon and crabs had disappeared from a nearby seaside resort. The fishing grounds were polluted, the fishermen's nets undoubtedly were extensively fouled. The alleged source of pollution was discharging polluting materials. Unfortunately it was not possible to establish any connection, for the types of pollution were different.

*Toxicological—Human—*2 specimens were submitted for examination.

A piece of temple bone was submitted after a non-fatal shooting accident. A lead pellet was found to be present. A person apprehended on a drunk in charge count submitted a sample of urine taken at the time for determination of alcohol content. His reasons for doing so were rather obscure in that the examination revealed he had consumed $8\frac{1}{2}$ pints of beer or 8 double whiskies just prior to his arrest.

*Miscellaneous—*10 samples were submitted.

3 samples of subsoil were submitted for determination of sulphate content and hence an assessment of their likely effect on concrete.

A badly corroded length of iron pipe was submitted along with soil in which it had been embedded. It was concluded that the corrosion was the result of attack by soil bacteria.

Young children tend to chew anything and everything within reach. A plastic tool set was submitted with the request that an opinion be given on its toxicity. Lead was present in various parts but it was concluded that it was very unlikely that it would be ingested by a child. An alarmed housewife submitted a broken baby's rattle. The "rattle" was caused by the presence inside of what looked like small beans. The baby might have consumed one or two. The rattle had been made in Hong Kong and the "beans" turned out to be Mung Beans, a well known food in China and elsewhere.

Animals also tend to eat rather indiscriminately. Wood shavings were found to be non-toxic but paint scrapings were found to contain sufficient lead to make them the likely cause of the death of some calves.

1 transformer oil was examined and found to be still suitable for use.

APPENDIX I

Summary of Samples Received

Milks	3,380
Other Drinks, Foods and Drugs	2,112
Air Pollution	4,180
Water Samples	755
Miscellaneous Samples	86
	——
	10,513
	——

APPENDIX II

Table of Milk (Appeal to Cows) Samples

East Riding County Council

Date	Sample No.	Milk-Fat Per Cent	Non-fat Solids Per Cent	Freezing-point Depression (Hortvet)
25/6/65	705B	2.70	8.80	0.544 °C
	706B	2.85	8.35	0.541 °C
	707B	3.30	9.00	0.537 °C
	708B	2.10	8.40	0.536 °C

APPENDIX III

Table of Samples examined under the Food and Drugs Act

	Kingston upon Hull	East Hull and Riding C.C.	Goole P.H.A.	Haltem- price U.D.C.	Private	Unsatis- factory
<i>Foods :</i>						
Aislet	9	—	—	—	—	4a
Almonds	5	1	—	—	—	—
Angelica	5	—	—	—	—	1d.
Apples	—	2	5	—	—	—
Cereals	4	—	—	—	—	—
Baby Puddings	1	—	—	—	—	—
Bacon and Products	6	—	2	—	—	2a
Baking Powder	6	—	—	—	—	—
†Beef Products	2	—	1	—	—	2a
Biscuits	8	—	—	—	1	1d.
Black Puddings	—	1	1	—	—	1a.
Blancmange	—	—	—	—	1	1d.
Brawn	1	—	—	—	—	—
Breads, Various	17	7	—	—	—	7a
Breakfast Cereals	7	1	—	—	—	—
Brussel Sprouts	—	4	—	—	—	—
Butter	26	3	1	—	—	—
Cabbage, Stuffed	—	—	1	—	—	—
Cakes	7	10	—	1	2	4b, 2d.
Cake Decorations	12	2	—	—	—	1c.
Carrots,	—	1	—	—	—	—
Cheese and Products	26	3	1	6	—	2b, 1c.
Cherries, Cocktail	6	—	—	—	—	—
Glace	8	—	—	—	—	—
Chewing Gum	16	—	—	1	—	—
Chicken Products	2	3	2	—	—	1a.
Chocolate	15	1	1	—	—	—
Substitute	1	—	—	—	—	—
Chocolates	10	—	—	1	—	—
Christmas Puddings	9	2	—	4	—	2b.
Tree Decorations	9	—	—	—	—	—
Cider	3	—	—	—	—	—
Cocoa	—	—	1	—	—	—
Coconut, Desiccated	8	—	—	—	—	—
Coffee	10	—	—	—	—	—
Soluble Solids	—	2	—	—	—	—
and Chicory Essence	4	—	—	—	—	—
and Chicory Powder	1	—	—	—	—	—
Cooking Fats and Oils	9	—	2	—	—	—
*Corned Beef and Products	2	1	2	—	5	1a, 2d.
Cream	27	3	1	1	—	—
Carried Forward :	282	47	21	14	9	15

	Kingston upon Hull	East Hull and Riding C.C.	Goole P.H.A.	Haltem- price U.D.C.	Private	Unsatis- factory
Brought Forward :	282	47	21	14	9	35
Cream Imitation	1	—	—	—	—	—
of Tartar	1	—	—	—	—	—
Crushes	—	1	—	—	—	—
Curd	—	1	—	—	—	—
*Drinks, Whole Citrus	—	6	—	—	—	—
Dripping	16	—	—	—	—	—
Egg Albumen Substitute	—	—	1	—	—	—
Eggs, Liquid	—	—	59	—	—	1
Fish Cakes	9	2	—	—	—	2a.
Dinner	1	—	—	—	—	—
Paste or Spread	10	—	—	—	—	—
Various	34	2	3	—	1	—
Flour	—	1	—	—	—	—
Mixtures	10	2	—	—	—	1b.
Self Raising	8	1	—	—	—	—
Food Colours	9	—	—	—	—	—
Flavourings	10	—	1	—	—	1a.
Fruit, Canned	10	6	7	—	4	1a, 1b, 1d
Curds	9	1	—	—	—	1b.
Dried	37	3	1	10	—	1d.
Juices	—	7	4	—	—	1a, 1c.
Pie Fillings	—	2	—	—	—	1d.
Pies	16	—	—	—	—	2a.
Pulp	—	—	10	—	—	—
Gelatine	1	—	—	—	—	—
Golden Raising Powder	3	—	—	—	—	—
Grapefruit	—	—	2	—	—	—
Groundnuts	—	—	2	—	—	1d.
†Ham Products	7	6	1	—	—	7a.
Hamburgers	8	1	—	—	—	3a.
Herbs, Dried	6	—	—	—	—	—
Honey	6	—	—	—	—	—
Jelly	1	—	—	—	—	—
Spread	1	—	—	—	—	—
Ice Cream	79	13	—	—	—	—
Dairy	12	1	—	—	—	—
Ice Lollies	3	1	—	—	—	—
Jam	7	2	1	—	2	1d.
Jellies, Table	9	—	—	—	—	—
†Kidney Products	1	—	1	—	—	2a.
Lard	25	1	—	—	—	—
Lettuce	—	1	1	—	—	—
Liqueurs	2	—	—	—	—	—
Carried Forward :	634	108	115	24	16	64

	Kingston upon Hull	East Hull and Riding C.C.	Goole P.H.A.	Haltem- price U.D.C.	Private	Unsatis- factory
Brought Forward :	634	108	115	24	16	64
Liver and Products . . .	—	5	—	—	—	—
*Luncheon Meat . . .	1	—	—	—	—	—
Margarine . . .	17	4	1	—	1	—
Marmalade . . .	1	2	—	—	—	—
Marzipan inc. Almond Paste .	8	4	—	—	—	—
Meat Essences . . .	1	—	—	—	—	—
Extracts . . .	6	—	—	—	—	—
*Loaf . . .	—	—	2	—	—	2a.
*Pastes and Spreads .	14	2	1	—	—	2b.
*Pies . . .	18	—	—	—	1	5a.
and Vegetable Pies .	—	—	—	—	1	1d.
Products, Miscellaneous	4	—	—	—	—	—
*Roll, inc. Stuffed .	3	—	—	—	—	—
Tenderiser . . .	—	1	—	—	—	—
Milk . . .	1353	193	—	19	1	103
Channel Islands . . .	55	39	—	2	—	4
Canned . . .	13	—	1	4	—	—
Dried . . .	—	—	—	—	3	—
Puddings . . .	8	1	—	—	—	—
Mincemeat . . .	11	3	—	3	—	2a.
†Minerals . . .	—	12	—	—	—	—
Mustard Powder . . .	1	—	—	1	—	—
Mustard Prepared . . .	7	—	—	3	—	3b.
Non Brewed Condiment .	—	1	—	—	—	—
Oatmeal, Oats . . .	1	—	—	—	—	—
Onions . . .	—	—	2	—	—	2d.
Oranges . . .	—	—	8	—	—	—
Pea Flour . . .	1	—	—	—	—	—
Pears . . .	—	1	—	—	—	—
Peel, Candied . . .	9	—	—	—	—	3d.
Cut, Mixed . . .	8	—	—	—	—	—
Perry . . .	3	—	—	—	—	—
Pickle, Sweet or Chutney .	—	1	4	—	—	—
Pickles, Various . . .	5	1	3	—	—	—
Polony, Various . . .	5	1	—	—	—	5a.
†Pork Products . . .	22	11	—	—	1	14a
Potato Crisps . . .	9	1	—	—	—	—
*Potted Meat . . .	3	3	—	—	—	3a.
Puddings, Miscellaneous .	—	1	—	—	—	—
Rice and Products . . .	17	—	—	—	—	—
Rolls . . .	1	—	—	—	1	1a.
Saccharin Tablets . . .	12	—	—	—	—	—
Salt . . .	8	1	—	—	—	—
Sauces . . .	10	3	—	—	—	—
Carried Forward :	2269	399	137	56	25	214

	Kingston upon Hull	East Hull and Riding C.C.	Goole P.H.A.	Haltem- price U.D.C.	Private	Unsatis- factory
Brought Forward :	2269	399	137	56	25	214
Sauce Mixes	9	—	—	—	—	—
Sausages, Various	121	36	3	7	—	17a.
Sausage Meat	—	3	—	—	—	—
Rolls	10	1	—	1	1	1a, 1d.
Saveloys	1	—	—	—	—	1a.
Savoury Ducks	1	—	—	—	—	—
Semolina	8	—	—	—	—	—
Soft Drink Powders	—	—	—	2	—	—
Soups, Canned	8	1	—	—	—	—
Soup Powders	12	1	—	5	—	—
Spices	19	—	—	4	—	—
Spirits	8	—	—	—	—	—
Squashes	—	5	—	—	—	—
Starches, Prepared	15	—	—	—	—	2b.
*†Steak Products	1	2	3	—	—	1a.
Suet	5	—	—	—	—	—
Sugars, Various	28	—	—	—	1	1a.
Sweets	44	24	2	7	—	—
Syrups	3	1	—	—	—	—
Tea	7	1	2	—	—	—
Tea Extract	1	—	—	—	—	—
Tomatoes	—	4	—	—	—	—
Tomatoes, Canned	9	1	4	—	—	2a.
*Tongue and Products	2	—	—	—	—	1a.
Veal and Products	1	—	—	—	—	—
Vegetables in brine	2	—	85	—	—	61c.
Canned	36	—	9	—	—	10a.
Dried	8	—	—	—	—	—
Vinegars	11	2	—	—	—	—
Wines	7	—	—	—	—	—
Yoghurt	3	—	—	—	—	—
<i>Drugs :</i>						
Liquids	25	5	—	—	—	1a, 2b.
Miscellaneous	10	—	—	—	—	—
Ointments/Creams	14	—	—	—	—	3b.
Powders	6	—	—	—	—	—
Tablets	84	3	—	—	—	1a.
Totals:	2488	489	245	82	27	319

NOTE :—† some of the products that could be classified under this heading are classified under products marked*

Unsatisfactory Samples

- Details under Composition of Foods
- Details under Food Labelling.
- Details under Food Additives.
- Details under Samples containing Extraneous Matter.

